

OUT OF THE RUINS EMERGED A ***SUPER BART***

CARRYING
11,280,173
PASSENGERS

OCT. 17 - DEC. 3, 1989
RUNNING 24 HRS. A DAY



ART RICHARDSON '89

BART EMPLOYEES EXCELLING IN THE TASK AT HAND.....

**BART MANAGEMENT THANKS YOU
AND WISHES YOU AND YOURS
A PROSPEROUS NEW YEAR.**



Public Utilities Commission

STATE OF CALIFORNIA

Resolution

WHEREAS, on October 17, 1989 at 5:04 p.m. a major earthquake struck the San Francisco Bay Area causing widespread loss of life and devastation,

WHEREAS, damaged buildings, streets, freeways, tunnels, and bridges presented threats to life and property,

WHEREAS, the earthquake immediately disrupted the transportation options of hundreds of thousands of San Francisco Bay Area commuters,

WHEREAS, BART management and employees immediately recognized the gravity of the situation and undertook emergency actions for which they were prepared by virtue of pre-established emergency response plans,

WHEREAS, BART employees immediately reported for emergency duty and implemented the pre-planned emergency response procedures and within hours restored safe system operations, despite long hard hours and disruption to their families,

WHEREAS, BART remained the major vital link for public transportation across San Francisco Bay, helping to minimize the hardships imposed on commuters by the disaster,

WHEREAS, BART management and employees implemented 24-hour emergency train service, which was sustained during the reconstruction of the San Francisco-Oakland Bay Bridge,

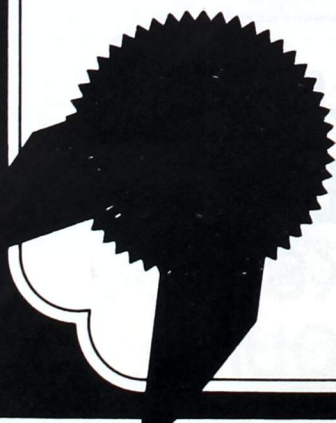
WHEREAS, BART management and employees safely and reliably transported an additional 135,000 passengers a day during BART's extended emergency train service,

WHEREAS, BART's dedication to continued safe rail transit service provided for the preservation of Bay Area commerce and the livelihood of its citizens,

BE IT HEREBY RESOLVED that the Public Utilities Commission of the State of California thanks, commends and honors the men and women of BART for their extraordinary effort and notes that BART has performed its tasks in an exemplary manner under unusually stressful conditions with a dedication to providing the public with safety-first service.

Dated at San Francisco, California this 22nd day of November, 1989.

Richard L. Rich
President
Frederick C. Lida
Secretary
Samuel J. [illegible]
Patricia [illegible]
Commissioners



I BART Meets the Challenge of the Earthquake

At a little after 5:04 on the afternoon of Tuesday, October 17, 1989, an earthquake centered near Santa Cruz struck the Bay Area and inflicted death and destruction over a wide area.

BART's facilities came through the temblor practically unscathed, but the earthquake collapsed a portion of the Cypress freeway in Oakland and knocked down a portion of the upper roadway on the Bay Bridge.

In San Francisco portions of other freeways and ramps were closed until their structural integrity could be investigated.

The earthquake, which measured 7.1 on the Richter scale, the sharpest jolt to hit the Bay Area since 1906, in just a few devastating seconds placed squarely on BART's shoulders the prime responsibility for moving commuters back and forth across the Bay.

This issue of BARTalk tells the story of how BART reacted in the first few days following the earthquake. The story is told primarily in the words of only a few of the BART employees who played a part in BART's reaction to its responsibilities in the wake of the earthquake.

Three-Tiered Response to Quake Interruption Restores Full Service by Next Morning

William Fleisher, BART's Chief Transportation Officer, holds up three fingers and ticks off the priorities on the night the earthquake struck.

"We had a three-tiered response," Fleisher says. "First was to move trains to the stations, protect the passengers and employees and move the passengers from the system," he says.

"Our next job was to restore revenue service as safely and as quickly as we could," Fleisher says, "and then our job was to provide regular service plus substitute for the Bay Bridge."

Like most of BART's top management officials, Fleisher was in his office at the moment of the earthquake and after calling BART's Engineering Department for assistance he immediately went to Central Control.

He began to get an overall picture of the transportation situation, including the fact that the earthquake had set off six of BART's nine seismic sensors. Reports were coming in from many sources and each had to be checked by visual observation.


He learned that both traction and facility power was out in San Francisco because power was no longer feeding into BART from the Pacific Gas and Electric Valencia Station.

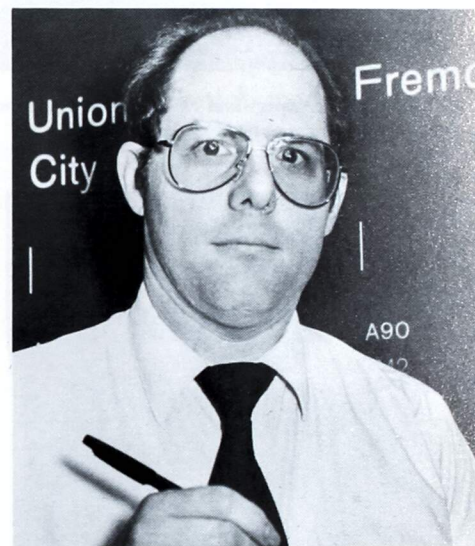
When he found out that people were stranded at the Daly City station — these were baseball fans from Candlestick Park who had reached the station by bus after the cancellation of the World Series Game — he ordered the station opened and allowed these people to wait in the trains, which had light and heat.

To compensate for the temporary loss of electricity floodlighting was used in stations and powered by generators. BART borrowed a generator from San Francisco's Department of Public Works.

Fleisher got home at 10:30 Wednesday morning, got three hours of sleep and then returned to work.

"I'm proud of the fact that we were open for full regular service the morning after the quake," he says.

Looking at the record number of passengers that BART carried while the Bay Bridge was down. Fleisher notes that, "We couldn't have done it without the KE track and the CCars," two components of BART's capacity expansion program. He also points out that "The most important contribution to BART's success was the effort put forward by the employees. The night of the quake they worked continually to restore service and then they turned around and carried record numbers of passengers for weeks." 



Jeff Ferris

Ferris Pressed Into Service as Official Scribe

Jeff Ferris recalls the few minutes immediately after the earth stopped shaking: "I went outside and looked around. Everything seemed okay and so I got my coat and was getting ready to go home."

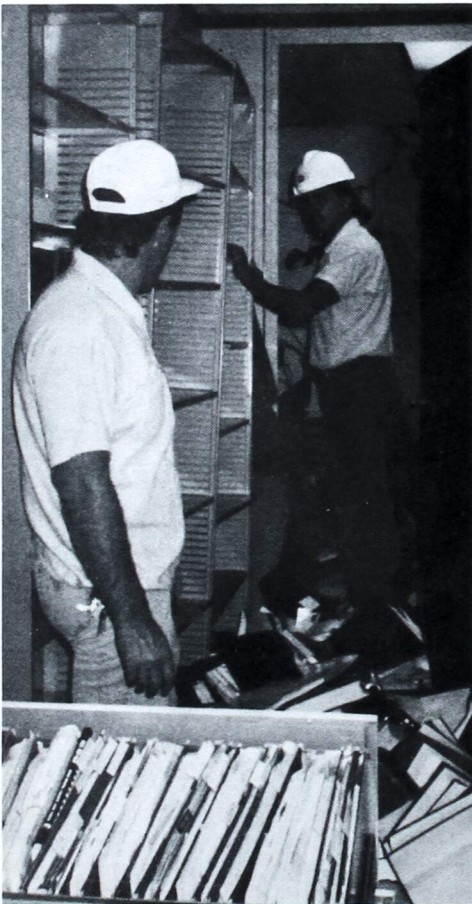
Ferris, who is in charge of BART's mail and supply operations, thought he might "just go by Central and see what was going on," he recalls, "so I stuck my head in the door."

Bill Fleisher and Larry Campbell, took one look at Ferris and said, "What are you doing?" "Nothing," Ferris said, "What do you need?" Thus Ferris was pressed into

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Officers Dave McNerney and Mike Hotten check out a parking lot at a BART station during a weekday following the closure of the Bay Bridge.



Although BART structures and facilities suffered only minor damage during the earthquake, the rolling temblor caused a considerable mess on the fifth floor at LMA. Bookcases toppled, file drawers were flung open and twisted, books were scattered and papers were strewn about. Luckily, as throughout BART's entire system, not a single person was hurt. Surveying the damage are, Mike O'Connor, left, and David Perez.



BART's phone center was swamped with calls from the public following the closure of the Bay Bridge, when BART became the primary cross-bay commuter link. Thousands of BART riders sought information about schedules and access to the system. Operators at the phone center were kept informed of day-by-day changes. Shown are Nina Aragon, standing, Phone Center Supervisor, and Operator Andrea McCauley.

Earthquake An Eye-Opener for Haley

John Haley, BART's Deputy General Manager, was meeting with General Manager Frank Wilson when the earthquake interrupted their deliberations.

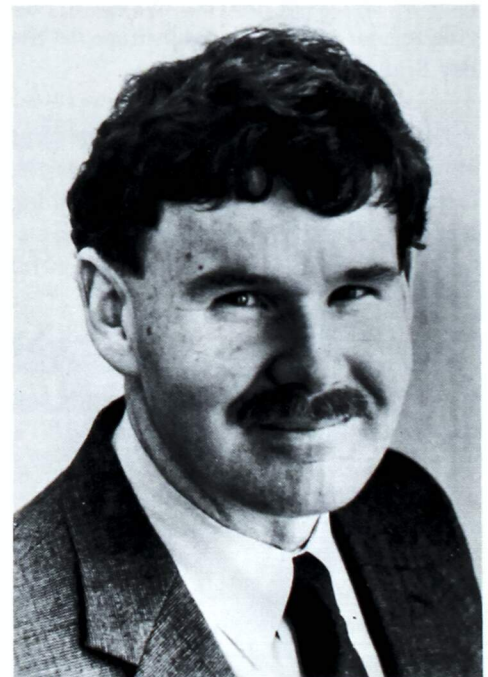
Haley accompanied Wilson to Central Control and found that BART's "earthquake plan" was being put into effect.

"I'd been used to rail operations being disrupted because of weather, but an earthquake disruption was something new," Haley says, "but responding in a controlled fashion with a definite plan was familiar.

"Our first concern was passenger safety and then to diagnose the system," Haley recalls. "We needed help to field all the reports we were getting and to organize our inspections and people showed up to help, many of whom hadn't even been called to come in," he says.

"Donna Kluewer, for example, a train controller at Central, showed up and began relaying information to train crews," Haley says.

At first nobody at Central had any real
See Haley - page 5



John Haley

knowledge of the damage wrought throughout the region. A life-long Boston Red Sox fan, Haley says, "I realized this thing was serious when they cancelled the World Series game."

Haley was with the group of BART management staff members who inspected the Transbay Tube. About midway through the Tube in total darkness except for flashlight—they stopped the train and got out for a closer inspection. "We were in the utility tunnel between the two track bores and we saw a light coming toward us and heard the sound of a small engine. We just stood there and then all of a sudden there was a BART employee on one of the utility vehicles — like a golf cart. He had come from the Embarcadero station to check out the Tube," Haley says.

In San Francisco, Haley went up to Market Street. "We could see smoke from the Marina and we heard sirens everywhere."

The experience of the earthquake and BART's response was a "real eye-opener" for Haley. "It was a crash course in operations and BART really shouldered the burden while the Bay Bridge was down," Haley says.

"You can say that there were actually some good things about the quake and BART's response," Haley says. "We know the structural system was well designed and built and we know the impressive capability of BART's people to adapt, to respond, to pitch in, regardless of what their everyday responsibilities were," he says. **b2**

| Tale of the Turnback

A forthcoming issue of BARTalk will tell about BART's newly-completed Daly City Turnback, Yard and Shops.

The new facilities represent the largest construction project undertaken by BART since the completion of the original system.



James Gallagher

| First A Smile, Then Concern

Jim Gallagher, BART's Assistant General Manager of Operations, began to smile to himself when he felt the first rumble of the earthquake, but his smile didn't last long.

He had experienced a slight earthquake in Portland, where he was Director of Rail Operations Planning for the region's transit agency, and he assumed that the October 17 temblor was just a typical Bay Area shudder.

"When it grew stronger, I became really concerned," he says, "and I was trying to decide on getting under the desk or under the doorway."

He went straight to Central Control to find out what had happened and what BART was doing. "A television set was on and when I saw the pictures of the Cypress freeway, I understood fully for the first time the scope of the disaster," he remembers.

"My assignment that night was to stay in Central Control and keep things cool," Gallagher says. "I tried to put some order on the inspection, get some consistent reports together, and get some specificity to the reports coming in," he says.

"What impressed me most was the drive to get service moving again. We had our first revenue service restored about nine-forty that night. That was remarkable," says Gallagher, "especially when you consider the scope of the problem."

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| A Long Commute for Hynes-Cherin

BART's Executive Manager, District Relations and Support Services, Brigid Hynes-Cherin's first thought when the floor beneath her at LMA started rolling a few minutes after five o'clock in the afternoon of October 17 was, "Where are the load-bearing walls?"

Instead of pressing against a load-bearing wall, however, she pushed against a teetering filing cabinet. "We didn't want it to fall on anybody," she remembers.

It was her second day on the job and what an initiation! As soon as the shaking stopped, Hynes-Cherin heard a voice asking, "Is anyone hurt?" Nobody on the fourth floor at LMA, or anywhere else on BART facilities, was hurt and Hynes-Cherin calmly proceeded to collect her papers and leave for a meeting in San Francisco. "I didn't know the Bay Bridge was down," she recalls. Downstairs at LMA she ran into Al Teragawachi, BART's Controller-Treasurer.

He lives in San Francisco and offered her a lift to her meeting. The two of them ended up taking the Dumbarton Bridge and Hynes-Cherin finally got to her apartment in San Francisco about 9:30 p.m. Her husband had just got home himself and they found there was no electricity.

During the next few days, Hynes-Cherin was in the thick of making plans for BART to provide transportation for commuters who normally would drive back and forth over the Bay Bridge.

She coordinated BART's contact with other governmental and transit agencies in the Bay Area and contacted the Urban Mass Transit Administration (UMTA) to see what chance BART had of receiving federal funds to help pay for post-earthquake activities.

A few weeks after the earthquake, she found time to sit down with BARTalk and talk about the preceding days of long hours, trying decisions and virtually meeting BART staff members overnight.

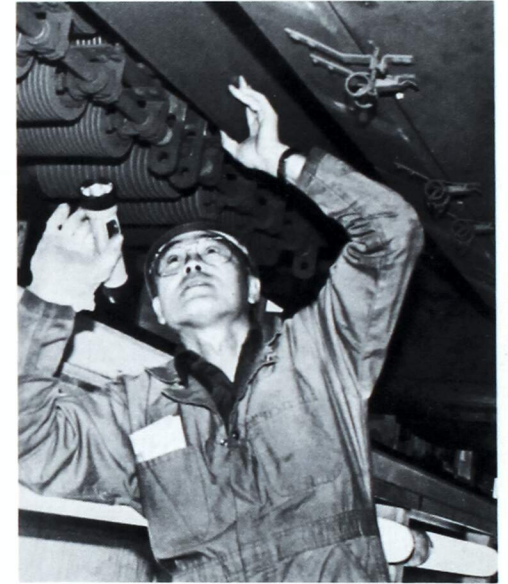
See Hynes-Cherin - page 11



BART's preventive maintenance crews and facilities were pushed to the limit with the increase in BART ridership following the earthquake. Ridership jumped from a pre-quake weekday average of 218,000 to nearly 350,000 just prior to the re-opening of the Bay Bridge. Usually BART cars are scheduled for regular preventive maintenance every six to ten weeks, depending on the number of hours they are in service. During the busiest ridership days, many cars were in service twice as long as usual, doubling the frequency of need for maintenance. Yet BART's maintenance facilities are limited. Adding extra crews wasn't the answer. BART already was working three shifts a day when the earthquake struck and the number of cars that can be worked on at one time put a ceiling on the number of cars that could be returned to service. The new shop facilities at Daly City were pressed into service and helped reduce the number of cars awaiting service. This photograph was taken at BART's Hayward Shop Facilities.



Cal Colman, left, maintenance supervisor at the Hayward Shop, checks on the status of repairs in the back shop with foreworker Mike Biehn.



Howard Tse inspects undercarriage of BART car during preventive maintenance check.

A Note from the General Manager



BART's response to the post-earthquake responsibilities that were suddenly thrust upon us was absolutely remarkable. It told me what this organization is capable of doing.

BART people really made it happen on the night of the quake and for days and weeks thereafter. They didn't need any pep rallies. They relied on themselves and they relied on each other and they placed a real high mark on the achievement scale. They set a very high standard.

Everybody talks about the Super Bowl champions, the 49ers—no wasted motion. Well, let me tell you that the 49ers aren't the only super team in town. There's one right here at BART!

Frank J. Wilson



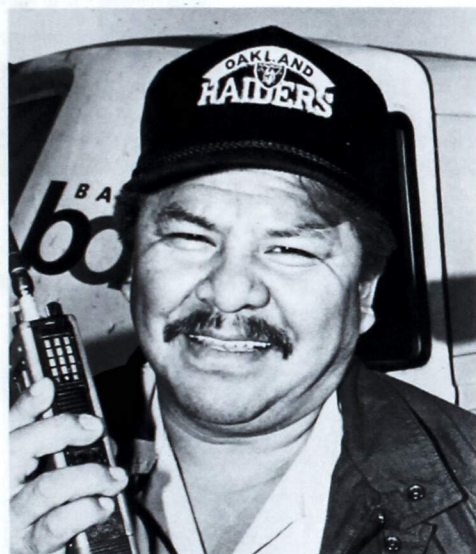
Ken Beakley and Carol Tomasa helped return cars to passenger service as soon as possible during the month-long period when BART was the major link between the East Bay and San Francisco.

| In the Transbay Tube: Cool and Confident Reactions Move Trains to Stations

Two BART trains, one eastbound and the other westbound, were in the 3.6-mile Transbay Tube when the earthquake struck.

The eastbound train, a ten-car train with approximately 3,000 passengers aboard, operated by Don Arnold, a BART train operator for nearly 15 years, was approaching the east end of the tube. He had no idea that an earthquake had sent shock waves rolling along the bottom of the Bay.

"It felt like an air bag went down on my right side," he recalls. "The train dipped and all the lights went out in the tube, but I still had traction power," he remembers.



Don Arnold

He had lost all communication with BART Central Control and his train was gradually losing speed. "I was trying to get my bearings," he says, "and I put the train in road manual and continued to West Oakland Station."

About the time he emerged from the east end of the tube, he heard a radio transmission directing him to proceed to the next station.

"When we came out of the tube, it was quiet outside. Usually you can hear traffic. It was eerie," Arnold recalls.

By the time he reached the West Oakland Station, however, the silence was broken by the sounds of sirens from fire engines and other emergency vehicles.

At the station, he learned for the first time that there had been an earthquake. His passengers left the train and the station was evacuated.

About three hours later, Arnold took the train westbound into the tube so that BART engineers could inspect the track and structure all the way to the Embarcadero Station in San Francisco. His headlights provided the only lighting in the tube at that time.

Arnold finally got home about 1:45 Wednesday morning. "I was getting a little bushed," he says.

Donna Wilkinson (better known to friends and colleagues as "Lulu"), a BART train operator for more than nine years, was in the middle of the tube when she received instructions to stop and hold her position.

"I never felt anything. I had no idea what had happened," she remembers. "The lights in the tube went down to about one-third," she says, "but I still had rail power."

Wilkinson informed her passengers that the train would be moving shortly. All the lights in the cars were on.

She could no longer hear Central Control, so she decided to proceed slowly to the next telephone in the tube and see if she could talk directly with Central. About that time, she heard instructions from Central on her portable radio to proceed slowly to the next station.

At the Embarcadero Station, her passengers left the train without any panic or confusion. She helped clear the station of passengers and then waited by her train for instructions. In the darkness—there was no station lighting at Embarcadero—three passengers made their way back to the platform with the intention of walking through the tube to the east side of the Bay. They had just learned that the Bay Bridge was closed. "Well, we didn't let them even start, needless to say," Wilkinson recalls, "but that was the first I'd heard of the bridge and it dawned on me then for the first time what had really



Donna Wilkinson

happened." Later she returned to the Lake Merritt Station in Oakland and then went back to Embarcadero with BART crews who were going to set up temporary station lighting.

She got home to San Leandro about 4 am. Wednesday. "I'd told my family that if we have a bad earthquake, I hope I'm in the tube because that's the safest place to be," Wilkinson says. **b3**

Ferris - from page 3

service as the official "scribe" for the night's activities in Central Control. Information was coming into Central so fast, and from so many sources, that it couldn't be recorded or remembered.

"Central needed to have a record of who was where and what was being checked and what the findings were," Ferris recalls. So for the next 15 hours, Ferris recorded times and bits of information.

"Bill or Larry or someone else would pass along information as it came in. Once in a while," Ferris says, "someone else would come over to check the timing on a report."

The busiest time was during the first two hours following the earthquake, when contact was made with individual stations and BART personnel. "We got calls from people who were driving home and called in to see if they could help. I told them to go to the nearest station and telephone from there," he says.

Following his stint as scribe, Ferris returned to the mailroom and completed his usual Wednesday shift. He took BART to Daly City and what did he find when he finally reached home and sought some rest and comfort? "The power was out," he remembers. **b2**

A Note from the Editor

We wish we could have told about the individual efforts of everyone at BART who worked so hard and so long following the earthquake to get the system back in operation and to keep it running so well during the closure of the Bay Bridge. We realize that the stories in this special issue just scratch the surface of the many stories of hard work and dedication by BART employees.

We have tried in this issue primarily to tell how the system was returned to service and how BART met unprecedented demands of increased ridership day after day. We picked a few stories to represent all of the stories. We probably missed a good story that we would like to have known about. If that story was your story, we would still like to know about it for possible use later on, perhaps in a pamphlet or in an article for one of the transportation magazines.

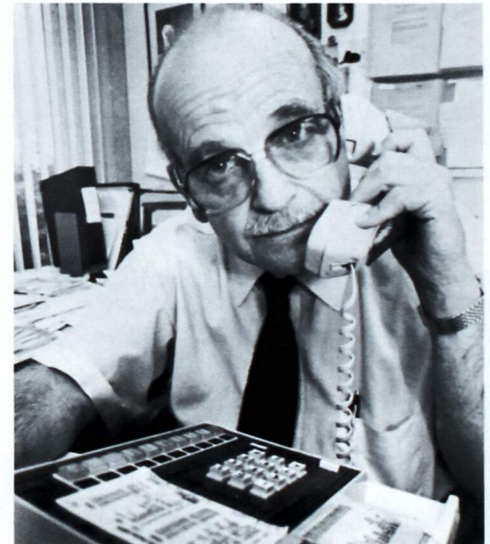
Why don't you drop me a line at LMA-1 or give me a call on Ext. 7120.



Project Open Hand, a San Francisco-based organization that provides meals for people in need, used BART to get meals to recipients in the East Bay, following the closure of the Bay Bridge. Open Hand's kitchen turned out 7,000 meals a day for earthquake victims



Mike Healy



Sy Moubert

BART's Public Affairs Department felt the pressure of media and public inquiries in the days and weeks following the earthquake.

Mike Healy, Department Manager, among other chores, produced newspaper ads to tell people what BART was doing, how to reach BART stations, where to park, what special tickets were available and how to reach BART by bus.

Sy Moubert, Manager of Public Information, was swamped with telephone calls from reporters, some of them as far away as Tokyo, Singapore and London. The Department released several news stories a day to keep the public informed about the level of ridership, changes in schedules, additional trains, how and where to buy tickets and the availability of parking at lots not adjacent to a BART station. "It was almost a matter of non-stop radio and television interviews all over the system," Moubert says, "and it didn't stop until the Bay Bridge was reopened."

Kay Springer, Manager of Passenger Service, and her staff handled a large increase in the number of telephone calls from the public. They met requests for brochures and schedules in unprecedented numbers. They hand-delivered discount and AC-BART tickets to area vendors and issued bulletins to inform people about where they could park their car. The pass office at LMA did a booming business.

“It’s Coming Through the Wall,” Mar Fears

Roy Mar’s office is located at LMA platform level with a wall between the main hallway and the tracks.

Mar, BART’s Manager for Train Control and Computer Maintenance, was about to leave his office, a little earlier than usual on the evening of the earthquake, so that he could watch the World Series game from Candlestick Park.

He remembers hearing a “clanging, rumbling sound,” like a “flat” train wheel. “That train’s got a bad one,” he thought to himself. Then he thought, “It sounds like it’s jumped the track. It’s coming through the wall.” Realizing by then that an earthquake was taking place, he tried to get to a wall to steady himself. “I started swaying and I couldn’t stay on my feet,” he says. “I got up against a wall and then,” he says with a laugh, “I got angry because I was alone in the office.”

He ran up to Central, worried about damage to the computers that are a vital part of BART’s train control system. “To my

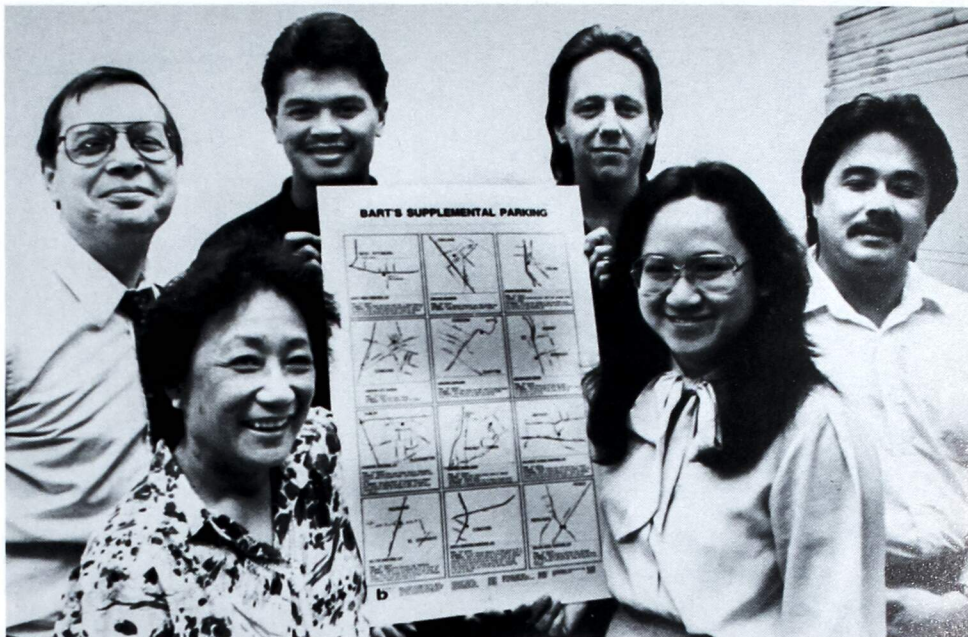


Roy Mar

amazement, nothing fell. Everything was running. We were in State One,” he says.

People who work with computers know that “State One” is the equivalent of “A-Okay,” with first line and backup computers humming away.

Mar helped take incoming messages and finally got to his home in Castro Valley around 2:30 Wednesday morning. **b2**



Members of BART’s Documentation Department worked long hours to help create ads needed for local newspapers to let people know how to reach and ride BART. Shown with a supplemental parking ad are Rowena Jang, left, and Tiffany Li, and in rear, from left, Jim Marlais, Department Manager, Mark Deloso, Terry Brooks and Basil Boyer. Not shown, but very much a part of the “map crew,” is Art Richardson.



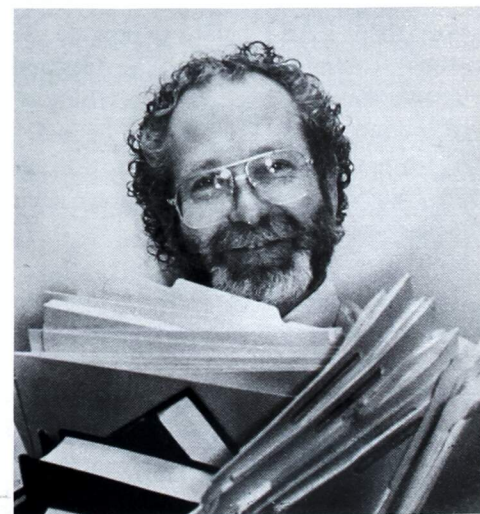
Quake Confines Naish to Office

Rolly Naish of BART’s legal staff was subjected to some solitary confinement that he couldn’t argue his way out of when the earth moved on October 17.

A passageway leading from his office to the rest of the Legal Department on the fifth floor at LMA was blocked by spilled books and tumbled steel bookcases. Only a few moments before another member of BART’s legal staff, Andrea Ravas, had passed through the passageway after leaving Naish’s office.

In the outer office, drawers were flung out or twisted in their frames and papers were scattered everywhere. “I got under the desk,” says Naish. There were several things broken, but the only long-lasting damage was to my plants. They aren’t too happy now,” he told BARTalk a few days after the tumbling temblor.

General Manager Frank Wilson, whose office is also on the fifth floor at LMA, not too far from the legal staff, heard the tumbling and falling and checked for injuries or damage when the rollingsubside. He peered at Naish through the books and twisted shelving and noted his confined — at least, temporarily status — and said, “Rolly, I think I like you better that way.” **b2**



Rolly Naish



BART engineers fanned out over the system on the night of the earthquake to check for damage. Assembled for a group photograph are, seated from left, Bob Garrison, Bill Snyder, Jay Burns, Matt McDole, Joe Van Overveen, Mark Chiu and Kris Hari, standing from left, Peter Todd, Skip Hamer, Jim Robinson, Somkiat Pongkanta, John Lodge, Charles Martin, Greg Austin, Jack Yee, Bob Mix, Jeron Donalds, Isaias Paiso, Aldo Del Col, Ray Chan, Chris Flynn, Chris Koukis, Fred Lagaya, Harbhajan Agroia.

McDole Gathers Team To Inspect BART System

When the shaking stopped on October 17, Matt McDole, BART's Department Manager of Engineering and Construction, talked to Jim Robinson, Supervising Extensions Project Engineer, across the large outer office of the construction division on the second floor at the MTC building. "That was a pretty big one," they agreed, and not one person disagreed as other engineers appeared from their offices.

McDole's first concern was to check on Central Control (Bill Fleisher called before he could get out the door) and assemble a team of engineers to inspect the BART system for damage. He headed for Central Control, stopping on the way only to check the cars at the Lake Merritt station to try to find members of his department who had expected to be homeward-bound. "I made a sweep and was fortunate to collect a good number of them," he recalls.

At Central Control six and seven earthquake sensors had activated and McDole huddled with BART's maintenance, operational and safety staff people and helped organize a procedure to draw in additional help and inspect the system's track and structures. Then teams of engineers, maintenance and safety personnel were organized for section by section inspections. (Frank Wilson and John Haley joined the team headed for the Transbay Tube.)

Two engineers, Bill Snyder and Marvin Dalander were flown by helicopter to inspect the BART tracks at the intersection where State Highway 24 and Interstate 580 intersect and then on to Orinda. A report had come into Central Control saying that chunks of concrete had fallen onto the BART trackway from a collapsing freeway.

"No. This hadn't happened," McDole says, "but we didn't know. We had to be sure our tracks were safe. This was after we'd heard about the collapse of the Cypress

See McDole - page 11

Gallagher - from page 5

At some point in the middle of the night, Gallagher recalls, "We knew where we'd be for the morning service. We wanted to run regular service."

During the next few days, Gallagher helped shape BART's plans to provide the crossbay commuter link. "The General Manager wanted us to put out everything we had and run as long as we could," he says, "and we had to anticipate the crowds, although we couldn't precisely pin down what the load would be."

Gallagher feels that BART's response to the transportation emergency was a tribute to its employees.

"Everybody pitched in. I saw people selling tickets, bright and early, out in the

cold with coats and blankets. That's just one example," he says, "and it applies to maintenance, transportation and professionals as well."

"I'm impressed with the ability of BART to work as a team toward a goal," Gallagher says, "and I find it very refreshing that all of the individuals who work here can elevate their game to a higher level."

Gallagher was born and reared in New Jersey. He became interested in transportation and planning when he was a student at Rider College in Lawrenceville, New Jersey. He worked previously with General Manager Frank Wilson when they both worked for the Southeastern Pennsylvania Transportation Authority and the New Jersey Transit Corporation. **b2**

McDole - from page 10

section of the freeway and the highway structures or pieces at this location could have fallen also."

Snyder and Dalander moved by helicopter to Orinda to inspect the tunnel through the Berkeley Hills, which sits practically atop the Hayward Fault. "We didn't know at that time for sure what had taken place, what fault was involved or where the epicenter was," McDole remembers. As it turned out, BART's tunnel through the hills, like the rest of its track and structures, sustained no damage and the track alignment was found to be in great shape.

As soon as the other inspection teams were dispatched by train or automobile, and the helicopter returned, McDole and Ralph Weule, Executive Manager of Safety and Investigations, flew over the Oakland line to the Transbay Tube Portend and for a second look to confirm no damage between 19th Street and MacArthur stations. It was getting dark so they returned for a second helicopter with better lights to fly over the Fremont line from Oakland to Fremont and back again.

"As preliminary inspections were completed and we were satisfied that the system was safe and had no apparent damage, the inspection teams crept slowly over the system, advancing trains in manual, and stopping to walk the tracks according to the inspectors' judgment. When these inspections were completed, trains were allowed to advance to terminals at reduced speed. We also inspected the new Daly City Turnback. Colin MacDonald, Acting Supervising Engineer, walked the whole Turnback," he says, "as well as much of the M-Line."

"Remember," McDole says, "these preliminary inspections took place at night and it took most of the night and at the crack of dawn, we had seven teams of engineers out to inspect everything again in the daylight."

How does McDole sum it up? "BART came out well. The system performed as designed. However, the inspections were accomplished expeditiously only through cooperation of several departments." **b2**



Vince Mahon checks out a seismic joint in the Transbay Tube during systematic inspection following the earthquake. The joint was designed to move under the strong forces of an earthquake. It did move all right—but barely more than an inch.

Hynes-Cherin - from page 5

"I think BART is a great place to work. People here are dedicated, professional and hardworking," she says, "and everyone has been very welcoming to me."

Hynes-Cherin, was born in Minnesota and lived in Washington, D.C. She has a law degree and a B.B.A. degree in transportation from the George Washington University.

Prior to joining BART she was Western Area Director for UMTA. **b2**



Brigid Hynes-Cherin

"I Could See the Buildings Move," Mahon Remembers

Vincent Mahon, head of BART's Power and Way Department, points at his desk and says, "I was right here in my office at the moment when the earthquake hit."

"I walked out into the lobby to see what was happening and I could literally see the buildings move," he recalls, "and then I stood under a door frame."

Then he went directly across the street to Central Control, where reports were already coming in, many of them from various law enforcement and emergency agencies throughout the Bay Area.

"Some of those reports were pretty wild. We heard that some trackway approaches had separated. We also heard that an interchange on the MacArthur Freeway had collapsed on our tracks. These turned out to be false, but they had to be checked," Mahon says.

"The General Manager was in Central when I got there and everyone agreed that the first order of business was to get out and make inspections," Mahon says. "We had to

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Ralph Weule

Advance Planning Key to BART Quake Response

Good advance planning was the key to BART's swift and efficient response to the earthquake, according to Ralph Weule, Executive Manager Safety and Investigations.


"We had a pre-planned response ready to go into effect," Weule notes, "and we followed the plan. However, Weule also notes, "the best plan requires human effort and we had a lot of effort by a whole lot of women and men. Everybody pulled together. We were safely ready for business the next morning."

Weule was in his office at LMA when the earthquake struck. When the shaking stopped, he helped inspect the building for damage.

He found some furniture damage on the fifth floor and saw files, papers and books littering the floor. A pile of bookcases and books had temporarily imprisoned Rolly Naish in his office.

During the next few hours, Weule helped inspect the system and assess any damage. Reports from BART engineers and other officials were directed to him and they showed, throughout the night as on-site inspections were made, that the system had suffered very little damage and that none of the damage was related to BART's ability to carry passengers safely. Weule estimates that the cost of repairing the minor damage will be approximately \$2 million.

In the days following the earthquake, BART facilities were also inspected by engineers from the California Public Utilities Commission and by outside BART consultants, to obtain an independent second look. "Their findings confirmed what we found immediately after the quake," Weule notes. He says the BART system was designed to withstand a seismic shock at least as great as the earthquake that struck the Bay Area in 1906, which seismologists say would have reached approximately 8.0 on the present-day Richter scale.

"The system performed as it was supposed to," Weule says. 

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clear the mainline of all trains also and we knew right away that we'd lost all power from the Valencia Street switching station in San Francisco," Mahon says.

The loss of electric power from the Valencia Street station meant that there was no traction power for trains in the San Francisco subways. "Traction power in the San Francisco subways came back up around 10 p.m., but in the meantime we had to power up the West Bay side from Oakland," Mahon says.

That was not entirely satisfactory, to say the least, because the power available from Oakland diminished gradually in the third rail from its source all the way to the Daly City Station. In the meantime, Mahon had called all available Power and Way crews to duty to take whatever corrective action was found necessary.

"We had heard there was some damage to the MacArthur Station and at first I thought we could get a train and go up there and see for ourselves," Mahon says, "but it was faster at that point to drive so we went up there by car. The damage was very minor," Mahon says.

At that point, Mahon went by train to the West Oakland Station to meet Frank Wilson and other BART officials for an inspection of the Transbay Tube.

He arranged for George Mackin, Manager of Maintenance Support, and Chuck Pelton, Manager of Track and Structures,

who were with Mahon at the MacArthur station, to take a train north for an inspection along the track to Richmond.

Two inspection trains, on the North (1) and South (2) tracks proceeded from the West Oakland Station, inspecting the aerial structure west from there to the Transbay Tube and then through the Transbay Tube to the Embarcadero Station.

"We got to the Embarcadero Station around midnight," Mahon recalls, "and there was no station power. The only lighting we had were flashlights and we had to leapfrog trains as we proceeded in road manual mode from station to station on our inspection to Daly City.

"It was about 3:30 a.m. when we reached Daly City," Mahon says, "and there were people waiting on the platform. These passengers were allowed to return with us and some of them rode as far as Lake Merritt."

Mahon is particularly complimentary of the train operators and engineering personnel who assisted in the inspection during that night and early morning. "As we advanced from station to station and train to train that night, all the train operators were on duty standing by with their trains to expedite inspection parties through the subways. It was a good joint effort and a major factor in turning the system back to revenue service," he says. 